

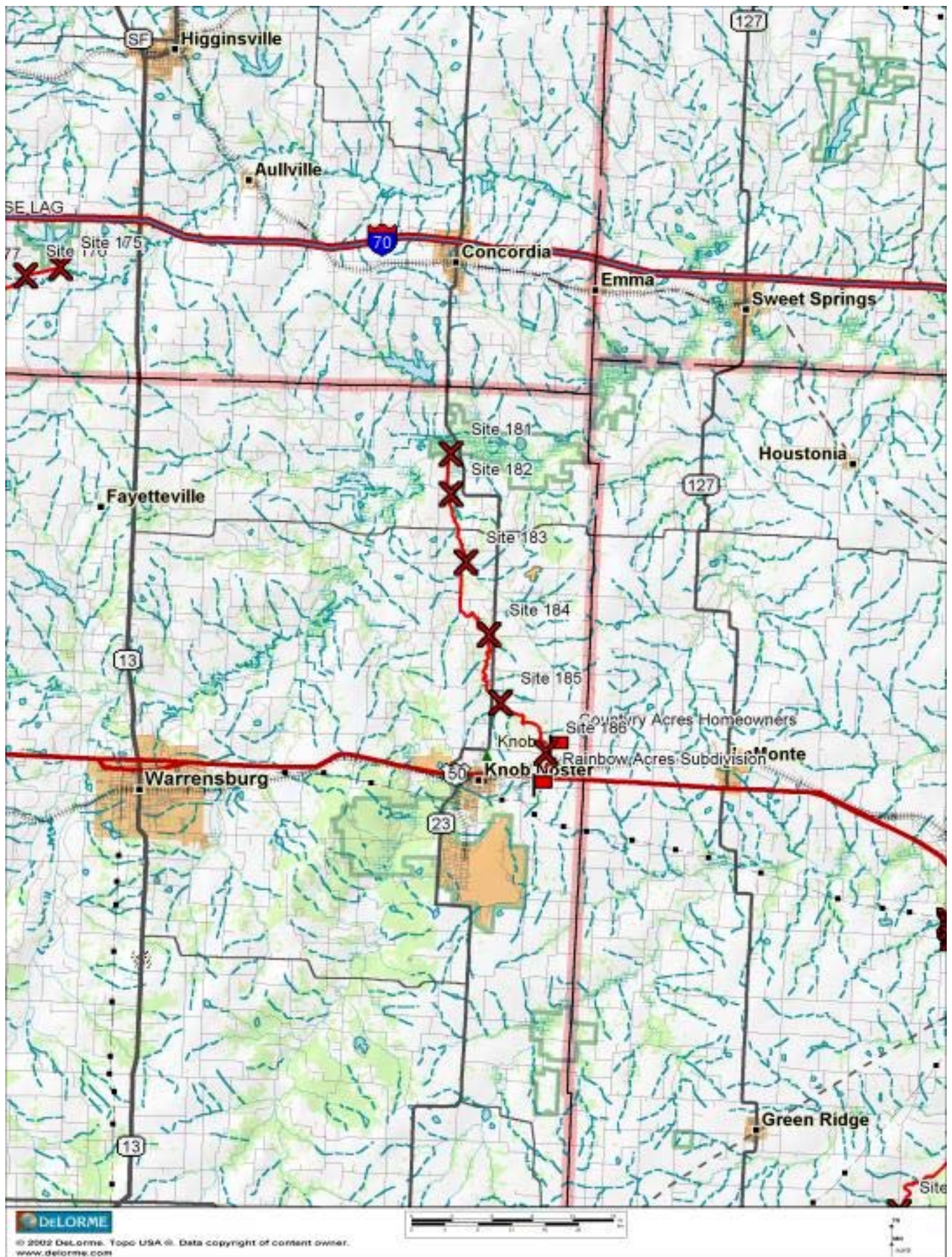
Use Attainability Analysis

for

WBID 0937 Walnut Creek

Submitted by
Tetra Tech, Inc

To
Missouri Department of Natural Resources
Water Protection Program



Field Data Sheets for Recreational Use Stream Surveys

Data Sheet A - Water Body Identification

RECEIVED

2005 MAY 23 PM 2:59

WATER PROTECTION PROGRAM

Water Body Name: (from USGS 7.5' quad)	WALNUT CREEK (181-186)		
8-digit HUC:	10300104		
Missouri WBID #:	0937		
County:	JOHNSON COUNTY		
Upstream Legal Description:			
Downstream Legal Description:			
Upstream Coordinates: (UGS 84, ddd.ddddd)	N38.77821	W093.52146	headwaters
Downstream Coordinates: (UGS 84, ddd.ddddd)	N39.90335	W093.56620	near mouth
Discharger Facility Name(s):	COUNTRY ACRES HOMEOWNERS / RAINBOW ACRES SUBDIVISION		
Discharger Permit Number(s):			
Number of Sites Evaluated:	6		
Name of Surveyor and Telephone Number:	CHAD BABBOUR, 410-356-8993		
Organization:	TETRA TECH INC.		
Position:	ASSOCIATE SCIENTIST		

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Chad E. Babour Date: 04/21/05

Field Data Sheets for Recreational Use Stream Surveys

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Data Sheet B - Site Characterization

2005 MAY 23 PM 2: 59

(A separate data sheet must be completed for each site)

WATER PROTECTION PROGRAM

Missouri WBID #: 181	Site Location Description:	
Site GPS Coordinates: N 38.90335 W 093.56620	Rt 23 Bridge in Ralph & Martha Perry Memorial Conservation Area	
Date & Time: 4-21-05 12:48 PM	Facility Name: Country Acres Homeowners / Rainbow Acres Subdivision	
Personnel: CB ELY	Permit Number:	
Current Weather Conditions: Cloudy, 73°	Weather Conditions for Past 7 days:	
Photo Ids: Upstream: 1764A 046	Downstream: 1763A 039	Other:

Uses Observed*:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (include number of individuals recreating, frequency of use, photo-documentation of evidence of recreational uses, etc.)

250m from the site there is a pull off. Site located within Conservation Area.

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input checked="" type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:	

Evidence of Human Use*:

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Rope swings	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle
<input type="checkbox"/> Other:				

Site Locations Map(s): Attach a map of entire segment with assessment sites clearly labeled. Mark any other items that may be of interest. (Include photographs)

*Some of this information is not intended to directly influence a decision on any one particular recreational use analysis but may point to conditions that need further analysis or that effect another use.

The stream was greater than 3m deep we were unable to get an average depth.

Page Two - Data Sheet B for WBID # 181 :

Stream Morphology: Visual Estimation Due to Depth & Turbidity of Water

Upstream View Physical Dimensions:

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input type="checkbox"/> Run	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Pool	Width (ft): <u>18.5 m</u>	Length (ft): <u>20 m</u>	Avg. Depth (ft): <u>water too turbid to est. depth</u>	Max. Depth (ft): <u>> 3m</u>
<input checked="" type="checkbox"/> Flow	Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<u>3 m</u>	Estimated (ft ³ /sec): <u>42s 55s 35s</u>	<u>37.3 s = 0.08 m/s</u>

Downstream View Physical Dimensions:

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Run	Width (ft): <u>24 m</u>	Length (ft): <u>20 m</u>	Avg. Depth (ft): <u>water too turbid to est. depth</u>	Max. Depth (ft): <u>> 3m</u>
<input type="checkbox"/> Pool	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Flow	Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Estimated (ft ³ /sec):		

Could not determine flow b/c we were unable to get to the center of the stream

Substrate*: (These values should add up to 100%.)

visually # ☐ % Cobble ☐ % Gravel ☐ % Sand 50 % Silt 50 % Mud/Clay ☐ % Bedrock

Aquatic Vegetation*: (note amount of vegetation or algal growth at the assessment site)

None visible

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input checked="" type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input checked="" type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach additional comments (including information from interviews) to this form.

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Chen Date: 04/21/05

Organization: TETRA Tech Inc. Position: ASSOCIATE SCIENTIST

QC EY 4-21-2005



Date: 21 Apr 05

Site identifier: 181

Page 2 of 3

1. (Protocol pg. 16) Does the field team have a 7.5 minute USGS topographic quadrangle map for the location of this site? DeLorme vision
2. (Protocol pg. 16) Does the field team measure and record location of the site using a GPS unit? Yes
3. (Protocol pg. 16) Are the GPS location data recorded in UTM, NAD 83? Yes - white - record
4. (Protocol pg. 16) Are the start and end points (upstream and downstream coordinates) recorded on Data Sheet A? Yes
5. (Protocol pg. 16) Are the narrative site assessments recorded on the forms provided in the protocol? Yes
6. (Protocol pg. 16) Is information for this site recorded on a new form? Yes
7. (protocol pg. 16) Is a photographic record made of this site? Yes
8. (Protocol pg. 16) Do the photographs include an upstream view and a downstream view? Yes
9. (Protocol pg. 16) If the team discovers evidence of observed or potential use, is a photograph taken documenting the evidence? NA
10. (Protocol pg. 16) Are the photographs catalogued in the field notes in a manner that indicates site location?
date? NA
view orientation?
what is being shown?
11. (Protocol pg. 16) If people are present, does the field team interview the people? NA
12. (Protocol pg 16) If an interview occurs, does the field team obtain and record in the field notes
history of the water body? NA
legal name of person interviewed?
address of person interviewed?
13. (Protocol) At the end of the site observation, is Data Sheet A (one sheet) completed and signed? Yes
14. (Protocol) At the end of the site observation, is Data Sheet B (two sheets) completed and signed? Yes
15. (QAPP pg 13) Does the field team have a list of equipment and expendable supplies? Yes

Date: 12 Apr 05 Site identifier: 181

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16. (QAPP pg 13) Does the field team have backup equipment? *no*
17. (QAPP pg 13) Have any battery-powered equipment been fully charged? *yes*
18. (QAPP pg 14) If the field team notices any deviations from the planned survey, does the field team record the deviations on the field forms? *yes*
19. (QAPP pg 14) Are all entries made in ink with no erasures? *yes*
20. (QAPP pg 14) Are any incorrect entries crossed out with a single strike mark, initialed and dated? *NA*
21. (QAPP pg 14) Are all field data sheets filled out completely? *yes*
22. (QAPP pg 14-15) Are the completed field sheets signed? *yes*
23. (QAPP pg 15) Is this a replicate visit (for precision of field measurements)? *NO*
24. (QAPP pg 15) If evidence of recreation use is obvious, do the Field Team Leader and the Field QC Officer agree? *NA*
25. (QAPP pg 18) Does the field team have documentation or other evidence that the measurement equipment is in working order? *yes*
26. (QAPP pg 19) Does the field team have documentation or other evidence that the GPS unit has been checked for accuracy? *no*

Signatures

We, the undersigned, hereby affirm, to the best of our knowledge, that this audit occurred and that the marking on this checklist accurately represent the audit results.

Auditor: *Don P Miller 21 Apr 05*

Field Team member 1: *Chad R. 04/21/05*

Field Team member 2: *Elizabeth Lee Yarbrough 4-21-05*

Field Team member 3:

Field Team member 4:

#6

Date:

21 am 05

Site identifier:

181

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~~Wetmore~~
Blackwater Run

Field Audit Checklist

Field work for Use Attainability Analysis for Contact Recreational Beneficial Use in Missouri

Overview

This checklist documents observations by an auditor (not from the State of Missouri) for field work performed according to "Recreational Use Attainability Analysis Protocol", Missouri Department of Natural Resources, Water Protection Program, November 3, 2004, and, "Field Data for Use Attainability Analysis (UAA)s for Contact Recreation Beneficial Use in Missouri", Tetra Tech, March 8, 2005. The purpose of the audit is to document the extent to which the field team follow the procedures in the protocol and the QAPP. The auditor does not perform simultaneous activities specified in the protocol and the QAPP for the purpose of comparing results obtained by the auditor and the field team. The field work is conducted here under Contract No. EP-C-04-030, Work Assignment No. B-15.

Procedure

The auditor arranges with the field workers to meet and accompany the field team for one or more site visits. When the auditor first meets the field team on the day of the field audit, the auditor provides the field team with a copy of this checklist. The auditor accompanies the field team to one or more site visits scheduled for the day. At each site, the auditor observes the work of the field team, and marks this checklist as events are observed. A new checklist is completed for each different site visited and audited. At the end of each site visit, both the field team and the auditor sign and date this checklist, attesting that this audit was performed as represented by this checklist and the markings thereon. After the day's work is complete, the auditor provides xerox copies of the completed checklists to a designated representative of the field team, and sends the original completed checklists to the State of Missouri.

Checklist

Date:

21 am 05

Time of arrival at site:

12:48 pm

Identifier of site:

181

Field Data Sheets for Recreational Use Stream Surveys

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2005 MAY 23 PM 2:59

WATER PROTECTION PROGRAM

Data Sheet B - Site Characterization (A separate data sheet must be completed for each site)

Missouri WBID #: 182	Site Location Description: Unnamed Road off Rt 23 overpass	
Site GPS Coordinates: N 35.88680 W 093.57142		
Date & Time: 4-21-2005 12:13 PM	Facility Name: Country Acres Homeowners / Rainbow Acres Subdivision	
Personnel: CB ELY	Permit Number:	
Current Weather Conditions: Partly Cloudy 75°	Weather Conditions for Past 7 days:	
Photo Ids: Upstream: 1762A 037	Downstream: 1762A 038	Other:

Uses Observed*:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (include number of individuals recreating, frequency of use, photo-documentation of evidence of recreational uses, etc.)
Extra Data:

There is a pool on the down stream portion with a max depth of 0.65m
Steve Long : There is no activity in this stream. *
205 W Broadway
Higgenville MO

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:	

Evidence of Human Use*:

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Rope swings	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle
<input type="checkbox"/> Other:				

Site Locations Map(s): Attach a map of entire segment with assessment sites clearly labeled. Mark any other items that may be of interest. (Include photographs)

*Some of this information is not intended to directly influence a decision on any one particular recreational use analysis but may point to conditions that need further analysis or that effect another use.

Stream Morphology:

Upstream View Physical Dimensions: in meters: 0.18, 0.44, 0.61, 0.30, 0.12

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input type="checkbox"/> Run	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Pool	Width (ft): <u>4.6m</u>	Length (ft): <u>20m</u>	Avg. Depth (ft): <u>0.33m</u>	Max. Depth (ft): <u>0.61m</u>
<input checked="" type="checkbox"/> Flow Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<u>3m</u>	Estimated (ft ³ /sec): <u>0.08</u>	<u>= 0.08 m/s</u>

Downstream View Physical Dimensions: in meters: 0.20, 0.44, 0.40, 0.38, 0.18

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Run	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft): <u>0.40^{BY}</u>
<input type="checkbox"/> Pool	Width (ft): <u>5.4m</u>	Length (ft): <u>20m</u>	Avg. Depth (ft): <u>0.32m</u>	Max. Depth (ft): <u>0.40m</u>
<input checked="" type="checkbox"/> Flow Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<u>3m</u>	Estimated (ft ³ /sec): <u>3m / 6.33^{cs}</u>	<u>= 0.48 m/s</u>

Substrate*: (These values should add up to 100%.)

<u>0</u> % Cobble	<u>20</u> % Gravel	<u>0</u> % Sand	<u>40</u> % Silt	<u>40</u> % Mud/Clay	<u>0</u> % Bedrock
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Aquatic Vegetation*: (note amount of vegetation or algal growth at the assessment site)

<u>Algae</u>

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input checked="" type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input checked="" type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach additional comments (including information from interviews) to this form.

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: [Signature] Date: 04-21-05

Organization: TEINA TECH INC. Position: ANALYST SCIENTIST

E2Y 4-21-2005



#5

Date: 21 Apr 05

Site identifier: 182

Page 1 of 3

WALNUT CR

Field Audit Checklist

Field work for Use Attainability Analysis for Contact Recreational Beneficial Use in Missouri

Overview

This checklist documents observations by an auditor (not from the State of Missouri) for field work performed according to "Recreational Use Attainability Analysis Protocol", Missouri Department of Natural Resources, Water Protection Program, November 3, 2004, and, "Field Data for Use Attainability Analysis (UAA)s for Contact Recreation Beneficial Use in Missouri", Tetra Tech, March 8, 2005. The purpose of the audit is to document the extent to which the field team follow the procedures in the protocol and the QAPP. The auditor does not perform simultaneous activities specified in the protocol and the QAPP for the purpose of comparing results obtained by the auditor and the field team. The field work is conducted here under Contract No. EP-C-04-030, Work Assignment No. B-15.

Procedure

The auditor arranges with the field workers to meet and accompany the field team for one or more site visits. When the auditor first meets the field team on the day of the field audit, the auditor provides the field team with a copy of this checklist. The auditor accompanies the field team to one or more site visits scheduled for the day. At each site, the auditor observes the work of the field team, and marks this checklist as events are observed. A new checklist is completed for each different site visited and audited. At the end of each site visit, both the field team and the auditor sign and date this checklist, attesting that this audit was performed as represented by this checklist and the markings thereon. After the day's work is complete, the auditor provides xerox copies of the completed checklists to a designated representative of the field team, and sends the original completed checklists to the State of Missouri.

Checklist

Date: 21 Apr 05

Time of arrival at site: 12:13 PM

Identifier of site: 182

Date: 21 Apr 05

Site identifier: 182

Page 2 of 3

1. (Protocol pg. 16) Does the field team have a 7.5 minute USGS topographic quadrangle map for the location of this site? De Lorme Mission
2. (Protocol pg. 16) Does the field team measure and record location of the site using a GPS unit? Yes
3. (Protocol pg. 16) Are the GPS location data recorded in UTM, NAD 83? degrees, minutes, seconds
4. (Protocol pg. 16) Are the start and end points (upstream and downstream coordinates) recorded on Data Sheet A? Yes
5. (Protocol pg. 16) Are the narrative site assessments recorded on the forms provided in the protocol? Yes
6. (Protocol pg. 16) Is information for this site recorded on a new form? Yes
7. (protocol pg. 16) Is a photographic record made of this site? Yes
8. (Protocol pg. 16) Do the photographs include an upstream view and a downstream view? Yes
9. (Protocol pg. 16) If the team discovers evidence of observed or potential use, is a photograph taken documenting the evidence? NA
10. (Protocol pg. 16) Are the photographs catalogued in the field notes in a manner that indicates site location? Yes
date? Yes
view orientation? Yes
what is being shown? Yes
11. (Protocol pg. 16) If people are present, does the field team interview the people? ~~NA~~ Yes
12. (Protocol pg 16) If an interview occurs, does the field team obtain and record in the field notes
history of the water body? Yes
legal name of person interviewed? Yes ~~NA~~
address of person interviewed? Yes
13. (Protocol) At the end of the site observation, is Data Sheet A (one sheet) completed and signed? Yes
14. (Protocol) At the end of the site observation, is Data Sheet B (two sheets) completed and signed? Yes
15. (QAPP pg 13) Does the field team have a list of equipment and expendable supplies? Yes

Date:

21 Apr 05

Site identifier:

182

Page 3 of 3

16. (QAPP pg 13) Does the field team have backup equipment? *W*
17. (QAPP pg 13) Have any battery-powered equipment been fully charged? *W*
18. (QAPP pg 14) If the field team notices any deviations from the planned survey, does the field team record the deviations on the field forms? *NA*
19. (QAPP pg 14) Are all entries made in ink with no erasures? *W*
20. (QAPP pg 14) Are any incorrect entries crossed out with a single strike mark, initialed and dated? *W*
21. (QAPP pg 14) Are all field data sheets filled out completely? *W*
22. (QAPP pg 14-15) Are the completed field sheets signed? *W*
23. (QAPP pg 15) Is this a replicate visit (for precision of field measurements)? *W*
24. (QAPP pg 15) If evidence of recreation use is obvious, do the Field Team Leader and the Field QC Officer agree? *NA*
25. (QAPP pg 18) Does the field team have documentation or other evidence that the measurement equipment is in working order? *W*
26. (QAPP pg 19) Does the field team have documentation or other evidence that the GPS unit has been checked for accuracy? *W*

Signatures

We, the undersigned, hereby affirm, to the best of our knowledge, that this audit occurred and that the marking on this checklist accurately represent the audit results.

Auditor:

Don P. White 21 Apr 05

Field Team member 1:

Chad E. R... 04/21/05

Field Team member 2:

Elizabeth Lee Yarbrough

Field Team member 3:

Field Team member 4:

Stream Morphology:

Upstream View Physical Dimensions: in meters: 0.02, 0.08, 0.16, 0.16, 0.18

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Run	Width (ft): <u>7.6m</u>	Length (ft): <u>20m</u>	Avg. Depth (ft): <u>0.12m</u>	Max. Depth (ft): <u>0.18</u>
<input type="checkbox"/> Pool	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Flow	Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	3m Estimated (ft ³ /sec): <u>15s / 3m = 0.20 m/s</u>	

15s, 14s, 16sDownstream View Physical Dimensions: in meters: 0.09, 0.14, 0.26, 0.26, 0.08

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Run	Width (ft): <u>4.4m</u>	Length (ft): <u>20m</u>	Avg. Depth (ft): <u>0.16m</u>	Max. Depth (ft): <u>0.26m</u>
<input type="checkbox"/> Pool	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Flow	Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	3m Estimated (ft ³ /sec): <u>27.3s / 3m = 0.11 m/s</u>	

29s, 27s, 26s

Substrate*: (These values should add up to 100%.)

<u>20</u> % Cobble	<u>0</u> % Gravel	<u>60</u> % Sand	<u>10</u> % Silt	<u>10</u> % Mud/Clay	<u>0</u> % Bedrock
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Aquatic Vegetation*: (note amount of vegetation or algal growth at the assessment site)

ALGAE THROUGHOUT.

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach additional comments (including information from interviews) to this form.

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Chris M Date: 04/21/05Organization: TETRA TECH INC. Position: ANALYST & SCOUTE2g 4-21-05

Field Data Sheets for Recreational Use Stream Surveys

RECEIVED

Data Sheet B - Site Characterization

2005 MAY 23 PM 2:59

(A separate data sheet must be completed for each site) WATER PROTECTION PROGRAM

Missouri WBID #: 183	Site Location Description:	
Site GPS Coordinates: N 38.85779 W 093.56342	NE 700th Rd Overpass	
Date & Time: 4-21-2005 1135 AM	Facility Name: Country Acres Homeowners/Rainbow Acres Subdivision	
Personnel: CB, ELY	Permit Number:	
Current Weather Conditions: Partly cloudy 70°	Weather Conditions for Past 7 days:	
Photo Ids: Upstream: 1759A 035	Downstream: 1760A 036	Other:

Uses Observed*:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (include number of individuals recreating, frequency of use, photo-documentation of evidence of recreational uses, etc.)
Downstream pool w/a max depth of 0.52m. Just downstream of the x site there is a pipeline running under the stream.

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:	

Evidence of Human Use*:

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Rope swings	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle
<input type="checkbox"/> Other:				

Site Locations Map(s): Attach a map of entire segment with assessment sites clearly labeled. Mark any other items that may be of interest. (Include photographs)

*Some of this information is not intended to directly influence a decision on any one particular recreational use analysis but may point to conditions that need further analysis or that effect another use.



#4

Date:

21 Apr 05

Site identifier:

183

Walnut Creek

Page 1 of 3

Field Audit Checklist

Field work for Use Attainability Analysis for Contact Recreational Beneficial Use in Missouri

Overview

This checklist documents observations by an auditor (not from the State of Missouri) for field work performed according to "Recreational Use Attainability Analysis Protocol", Missouri Department of Natural Resources, Water Protection Program, November 3, 2004, and, "Field Data for Use Attainability Analysis (UAA)s for Contact Recreation Beneficial Use in Missouri", Tetra Tech, March 8, 2005. The purpose of the audit is to document the extent to which the field team follow the procedures in the protocol and the QAPP. The auditor does not perform simultaneous activities specified in the protocol and the QAPP for the purpose of comparing results obtained by the auditor and the field team. The field work is conducted here under Contract No. EP-C-04-030, Work Assignment No. B-15.

Procedure

The auditor arranges with the field workers to meet and accompany the field team for one or more site visits. When the auditor first meets the field team on the day of the field audit, the auditor provides the field team with a copy of this checklist. The auditor accompanies the field team to one or more site visits scheduled for the day. At each site, the auditor observes the work of the field team, and marks this checklist as events are observed. A new checklist is completed for each different site visited and audited. At the end of each site visit, both the field team and the auditor sign and date this checklist, attesting that this audit was performed as represented by this checklist and the markings thereon. After the day's work is complete, the auditor provides xerox copies of the completed checklists to a designated representative of the field team, and sends the original completed checklists to the State of Missouri.

Checklist

Date:

21 Apr 05

Time of arrival at site:

11:38

Identifier of site:

183

Date: 11/01/05 Site identifier: 183

Page 2 of 3

1. (Protocol pg. 16) Does the field team have a 7.5 minute USGS topographic quadrangle map for the location of this site? DeLorme manuscript
2. (Protocol pg. 16) Does the field team measure and record location of the site using a GPS unit? yz
3. (Protocol pg. 16) Are the GPS location data recorded in UTM, NAD 83? degrees minute seconds
4. (Protocol pg. 16) Are the start and end points (upstream and downstream coordinates) recorded on Data Sheet A? yz
5. (Protocol pg. 16) Are the narrative site assessments recorded on the forms provided in the protocol? yz
6. (Protocol pg. 16) Is information for this site recorded on a new form? yz
7. (protocol pg. 16) Is a photographic record made of this site? yz
8. (Protocol pg. 16) Do the photographs include an upstream view and a downstream view? yz
9. (Protocol pg. 16) If the team discovers evidence of observed or potential use, is a photograph taken documenting the evidence? NA
10. (Protocol pg. 16) Are the photographs catalogued in the field notes in a manner that indicates
site location? yz
date? yz
view orientation? yz
what is being shown? yz
11. (Protocol pg. 16) If people are present, does the field team interview the people? NA
12. (Protocol pg 16) If an interview occurs, does the field team obtain and record in the field notes
history of the water body? NA
legal name of person interviewed?
address of person interviewed?
13. (Protocol) At the end of the site observation, is Data Sheet A (one sheet) completed and signed? yz
14. (Protocol) At the end of the site observation, is Data Sheet B (two sheets) completed and signed? yz
15. (QAPP pg 13) Does the field team have a list of equipment and expendable supplies? yz

Date: 21 Apr 05 Site identifier: 183

Page 3 of 3

16. (QAPP pg 13) Does the field team have backup equipment? *W*
17. (QAPP pg 13) Have any battery-powered equipment been fully charged? *W*
18. (QAPP pg 14) If the field team notices any deviations from the planned survey, does the field team record the deviations on the field forms? *NA*
19. (QAPP pg 14) Are all entries made in ink with no erasures? *W*
20. (QAPP pg 14) Are any incorrect entries crossed out with a single strike mark, initialed and dated? *NA*
21. (QAPP pg 14) Are all field data sheets filled out completely? *W*
22. (QAPP pg 14-15) Are the completed field sheets signed? *W*
23. (QAPP pg 15) Is this a replicate visit (for precision of field measurements)? *W*
24. (QAPP pg 15) If evidence of recreation use is obvious, do the Field Team Leader and the Field QC Officer agree? *NA*
25. (QAPP pg 18) Does the field team have documentation or other evidence that the measurement equipment is in working order? *W*
26. (QAPP pg 19) Does the field team have documentation or other evidence that the GPS unit has been checked for accuracy? *W*

Signatures

We, the undersigned, hereby affirm, to the best of our knowledge, that this audit occurred and that the marking on this checklist accurately represent the audit results.

Auditor: *Don P. Miller 21 Apr 05*

Field Team member 1: *John 04/21/05*

Field Team member 2: *Elizabeth de Yarnough*

Field Team member 3:

Field Team member 4:

Field Data Sheets for Recreational Use Stream Surveys

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Data Sheet B - Site Characterization

2005 MAY 23 PM 2:59

(A separate data sheet must be completed for each site) WATER PROTECTION PROGRAM

Missouri WBID #: 1784	Site Location Description:	
Site GPS Coordinates: N 38.82747 W 093.55122	NE 500th Rd Overpass	
Date & Time: 4-21-2005 10:50 AM	Facility Name: County Acres Homeowners/Rainbow Acres Subdivision	
Personnel: CB, ELY	Permit Number:	
Current Weather Conditions: Mostly Cloudy 68°	Weather Conditions for Past 7 days:	
Photo Ids: Upstream: 1757A C33	Downstream: 1758A C34	Other:

Uses Observed*:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (include number of individuals recreating, frequency of use, photo-documentation of evidence of recreational uses, etc.)
 Extra measurements:
 On upstream portion there is a pool w/a max depth of 0.90m.
 On downstream portion there is a pool w/a max depth of 0.56m.

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:	

Evidence of Human Use*:

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Rope swings	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle
<input type="checkbox"/> Other:				

Site Locations Map(s): Attach a map of entire segment with assessment sites clearly labeled. Mark any other items that may be of interest. (Include photographs)

*Some of this information is not intended to directly influence a decision on any one particular recreational use analysis but may point to conditions that need further analysis or that effect another use.

Stream Morphology:

Upstream View Physical Dimensions: in Meters: 0.12, 0.12, 0.10, 0.09, 0.14

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Run	Width (ft): <u>6.5m</u>	Length (ft): <u>20m</u>	Avg. Depth (ft): <u>0.114m</u>	Max. Depth (ft): <u>0.12m</u>
<input type="checkbox"/> Pool	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Flow	Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	3m Estimated (ft ³ /sec): <u>3m/47s = 0.12 m/s</u>	

Downstream View Physical Dimensions:

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input type="checkbox"/> Run	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Pool	Width (ft): <u>6.5m</u>	Length (ft): <u>20m</u>	Avg. Depth (ft): <u>0.296m</u>	Max. Depth (ft): <u>0.48m</u>
<input checked="" type="checkbox"/> Flow	Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	3m Estimated (ft ³ /sec): <u>3m/47s = 0.06 m/s</u>	

Substrate*: (These values should add up to 100%.)

<u>35</u> % Cobble	<u>5</u> % Gravel	<u>0</u> % Sand	<u>25</u> % Silt	<u>25</u> % Mud/Clay	<u>10</u> % Bedrock
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Aquatic Vegetation*: (note amount of vegetation or algal growth at the assessment site)

<u>Algae</u>

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: <u>brown</u>
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach additional comments (including information from interviews) to this form.

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: [Signature] Date: 04/20/05

Organization: TEMA Tech Inc. Position: Associate Scientist

EJey 4-20-05



#3

Date: 21 Apr 05 Site identifier: #184
Walnut Creek

Page 1 of 3

Field Audit Checklist

Field work for Use Attainability Analysis for Contact Recreational Beneficial Use in Missouri

Overview

This checklist documents observations by an auditor (not from the State of Missouri) for field work performed according to "Recreational Use Attainability Analysis Protocol", Missouri Department of Natural Resources, Water Protection Program, November 3, 2004, and, "Field Data for Use Attainability Analysis (UAA)s for Contact Recreation Beneficial Use in Missouri", Tetra Tech, March 8, 2005. The purpose of the audit is to document the extent to which the field team follow the procedures in the protocol and the QAPP. The auditor does not perform simultaneous activities specified in the protocol and the QAPP for the purpose of comparing results obtained by the auditor and the field team. The field work is conducted here under Contract No. EP-C-04-030, Work Assignment No. B-15.

Procedure

The auditor arranges with the field workers to meet and accompany the field team for one or more site visits. When the auditor first meets the field team on the day of the field audit, the auditor provides the field team with a copy of this checklist. The auditor accompanies the field team to one or more site visits scheduled for the day. At each site, the auditor observes the work of the field team, and marks this checklist as events are observed. A new checklist is completed for each different site visited and audited. At the end of each site visit, both the field team and the auditor sign and date this checklist, attesting that this audit was performed as represented by this checklist and the markings thereon. After the day's work is complete, the auditor provides xerox copies of the completed checklists to a designated representative of the field team, and sends the original completed checklists to the State of Missouri.

Checklist

Date: 21 Apr 05

Time of arrival at site: 10:20 AM

Identifier of site: #184

Date: 21 Apr 05 Site identifier: 184

Page 2 of 3

1. (Protocol pg. 16) Does the field team have a 7.5 minute USGS topographic quadrangle map for the location of this site? *missive DeLorme*
2. (Protocol pg. 16) Does the field team measure and record location of the site using a GPS unit? *yes*
3. (Protocol pg. 16) Are the GPS location data recorded in UTM, NAD 83? *Jeples minter ranch*
4. (Protocol pg. 16) Are the start and end points (upstream and downstream coordinates) recorded on Data Sheet A? *yes*
5. (Protocol pg. 16) Are the narrative site assessments recorded on the forms provided in the protocol? *yes*
6. (Protocol pg. 16) Is information for this site recorded on a new form? *yes*
7. (protocol pg. 16) Is a photographic record made of this site? *yes*
8. (Protocol pg. 16) Do the photographs include an upstream view and a downstream view? *yes*
9. (Protocol pg. 16) If the team discovers evidence of observed or potential use, is a photograph taken documenting the evidence? *NA*
10. (Protocol pg. 16) Are the photographs catalogued in the field notes in a manner that indicates site location? *yes*
date? *yes*
view orientation? *yes*
what is being shown? *yes*
11. (Protocol pg. 16) If people are present, does the field team interview the people? *NA*
12. (Protocol pg 16) If an interview occurs, does the field team obtain and record in the field notes
history of the water body? *NA*
legal name of person interviewed?
address of person interviewed?
13. (Protocol) At the end of the site observation, is Data Sheet A (one sheet) completed and signed? *yes*
14. (Protocol) At the end of the site observation, is Data Sheet B (two sheets) completed and signed? *yes*
15. (QAPP pg 13) Does the field team have a list of equipment and expendable supplies? *yes*

Date: 21 Apr 05 Site identifier: 184

Page 3 of 3

16. (QAPP pg 13) Does the field team have backup equipment? *no*
17. (QAPP pg 13) Have any battery-powered equipment been fully charged? *yes*
18. (QAPP pg 14) If the field team notices any deviations from the planned survey, does the field team record the deviations on the field forms? *NA*
19. (QAPP pg 14) Are all entries made in ink with no erasures? *yes*
20. (QAPP pg 14) Are any incorrect entries crossed out with a single strike mark, initialed and dated? *yes*
21. (QAPP pg 14) Are all field data sheets filled out completely? *yes*
22. (QAPP pg 14-15) Are the completed field sheets signed? *yes*
23. (QAPP pg 15) Is this a replicate visit (for precision of field measurements)? *no*
24. (QAPP pg 15) If evidence of recreation use is obvious, do the Field Team Leader and the Field QC Officer agree? *NA*
25. (QAPP pg 18) Does the field team have documentation or other evidence that the measurement equipment is in working order? *yes*
26. (QAPP pg 19) Does the field team have documentation or other evidence that the GPS unit has been checked for accuracy? *no*

Signatures

We, the undersigned, hereby affirm, to the best of our knowledge, that this audit occurred and that the marking on this checklist accurately represent the audit results.

Auditor: *Don P Miller 21 Apr 05*

Field Team member 1: *Chad R 4/21/05*

Field Team member 2: *Elizabeth Lee Yarbrough*

Field Team member 3:

Field Team member 4:

Field Data Sheets for Recreational Use Stream Surveys

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2005 MAY 23 PM 2: 59

WATER PROTECTION PROGRAM

Data Sheet B - Site Characterization

(A separate data sheet must be completed for each site)

ACC 10.1A

Missouri WBID #: 185	Site Location Description:	
Site GPS Coordinates: N38.79893 W093.54581	E 1161 overpass	
Date & Time: 4-20-2005 5:52 PM	Facility Name: Country Acres Homeowners/Rainbow Acres Subdivision	
Personnel: CB, ELY	Permit Number:	
Current Weather Conditions: Partly cloudy 75°	Weather Conditions for Past 7 days:	
Photo Ids: Upstream: 1751A 027	Downstream: 1752A 028	Other:

Uses Observed*:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (include number of individuals recreating, frequency of use, photo-documentation of evidence of recreational uses, etc.)

Interviewed a family who declined to give information. They never observed any recreational uses on this stream.

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:	

Evidence of Human Use*:

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Rope swings	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle
<input type="checkbox"/> Other:				

Site Locations Map(s): Attach a map of entire segment with assessment sites clearly labeled. Mark any other items that may be of interest. (Include photographs)

*Some of this information is not intended to directly influence a decision on any one particular recreational use analysis but may point to conditions that need further analysis or that effect another use.

Stream Morphology:

Upstream View Physical Dimensions: in m: ^{EY 4-20-05} ~~0.20~~, 0.08, 0.02, 0.12, 0.18, 0.12

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Run	Width (ft): <u>4.0m</u>	Length (ft): <u>20m</u>	Avg. Depth (ft): <u>0.104m</u>	Max. Depth (ft): <u>0.18m</u>
<input type="checkbox"/> Pool	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Flow	Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	3m Estimated (ft/sec): <u>3m / 29s = 0.11 m/s</u>	

Downstream View Physical Dimensions: in m: ^{EY 4-20-05} 0.01, 0.02, 0.09, 0.05, 0.08

<input checked="" type="checkbox"/> Riffle	Width (ft): <u>1.8m</u>	Length (ft): <u>20m</u>	Avg. Depth (ft): <u>0.038m</u>	Max. Depth (ft): <u>0.09m</u>
<input type="checkbox"/> Run	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft): <u>0.09</u>
<input type="checkbox"/> Pool	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Flow	Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	3m Estimated (ft/sec): <u>3m / 5.66s = 0.54 m/s</u>	

Substrate*: (These values should add up to 100%.)

<u>0</u> % Cobble	<u>80</u> % Gravel	<u>15</u> % Sand	<u>0</u> % Silt	<u>5</u> % Mud/Clay	<u>0</u> % Bedrock
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Aquatic Vegetation*: (note amount of vegetation or algal growth at the assessment site)

<u>Algae</u>

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach additional comments (including information from interviews) to this form.

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: [Signature] Date: 04/20/05

Organization: TEMA Tech Inc. Position: ASSOCIATE SCIENTIST

Ely 4-20-2005



Field Data Sheets for Recreational Use Stream Surveys

RECEIVED

2005 MAY 23 PM 2: 59

WATER PROTECTION PROGRAM

Data Sheet B - Site Characterization

(A separate data sheet must be completed for each site)

Missouri WBID #: 186	Site Location Description:	
Site GPS Coordinates: N 38.77821 W 093.52146	NE 175th Overpass	
Date & Time: 4-20-2005 5:18 PM	Facility Name: Country Acres Homeowners/Rainbow Acres Subdivision	
Personnel: C.B. ELY	Permit Number:	
Current Weather Conditions: overcast	Weather Conditions for Past 7 days:	
Photo Ids: Upstream: 179A 025	Downstream: 179A 026	Other:

Uses Observed*:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (include number of individuals recreating, frequency of use, photo-documentation of evidence of recreational uses, etc.)

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:	

Evidence of Human Use*:

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Rope swings	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle
<input type="checkbox"/> Other:				

Site Locations Map(s): Attach a map of entire segment with assessment sites clearly labeled. Mark any other items that may be of interest. (Include photographs)

*Some of this information is not intended to directly influence a decision on any one particular recreational use analysis but may point to conditions that need further analysis or that effect another use.

Stream Morphology:

Upstream View Physical Dimensions: m: 0.10, 0.15, 0.16, 0.16, 0.10

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input type="checkbox"/> Run	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Pool	Width (ft): <u>3.9m</u>	Length (ft): <u>20m</u>	Avg. Depth (ft): <u>0.134m</u>	Max. Depth (ft): <u>0.16m</u>
<input checked="" type="checkbox"/> Flow	Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Estimated (ft ³ /sec):	

Downstream View Physical Dimensions: m: 0.20, 0.10, 0.10, 0.08, 0.06

<input type="checkbox"/> Riffle	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Run	Width (ft): <u>2.2m</u>	Length (ft): <u>20m</u>	Avg. Depth (ft): <u>0.108m</u>	Max. Depth (ft): <u>0.20m</u>
<input type="checkbox"/> Pool	Width (ft):	Length (ft):	Avg. Depth (ft):	Max. Depth (ft):
<input checked="" type="checkbox"/> Flow	Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<u>3m</u>	Estimated (ft ³ /sec): <u>27.665 / 3m = 0.11 m/s</u>

Substrate*: (These values should add up to 100%.)

<u>5</u> % Cobble	<u>5</u> % Gravel	<u>0</u> % Sand	<u>0</u> % Silt	<u>0</u> % Mud/Clay	<u>90</u> % Bedrock
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Aquatic Vegetation*: (note amount of vegetation or algal growth at the assessment site)

<u>Algae</u>

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input checked="" type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach additional comments (including information from interviews) to this form.

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Chue M Date: 04-20-05

Organization: TETRA TECH INC. Position: ASSOCIATE SCIENTIST

EJY 4-20-2005

